

Using HiPS 3D for time-domain data

CDS Experiments



ALADiN

TDIG - Görlitz Interop Nov 2025



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and the Aladin team

□ Outline

- Datasets description
- Conversion to HiPS 3D pipeline
- Demo
- What's missing?

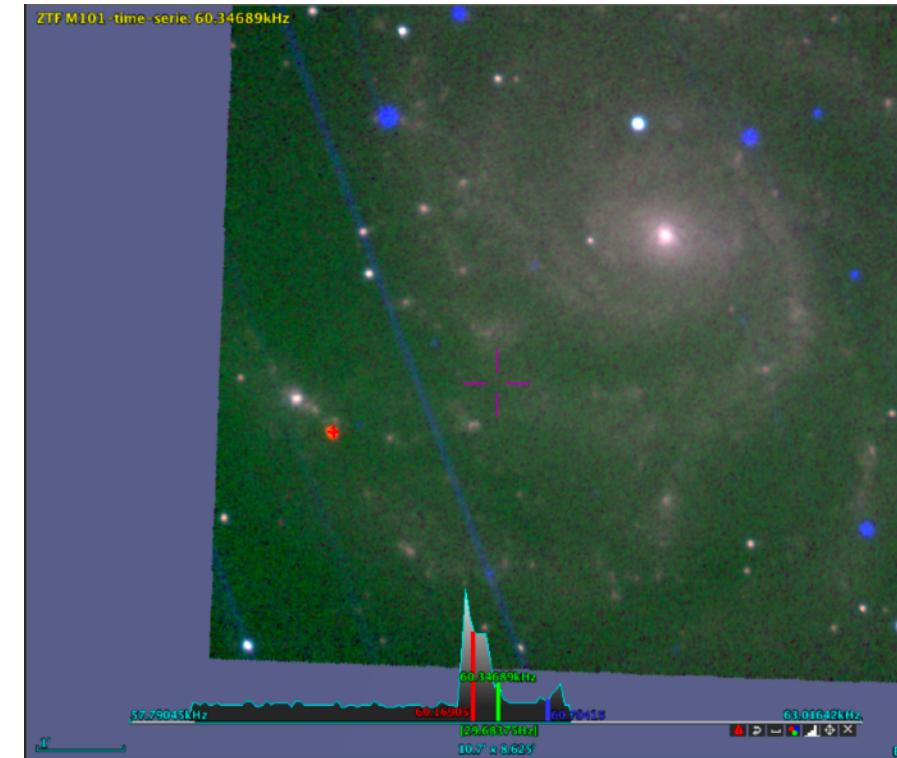
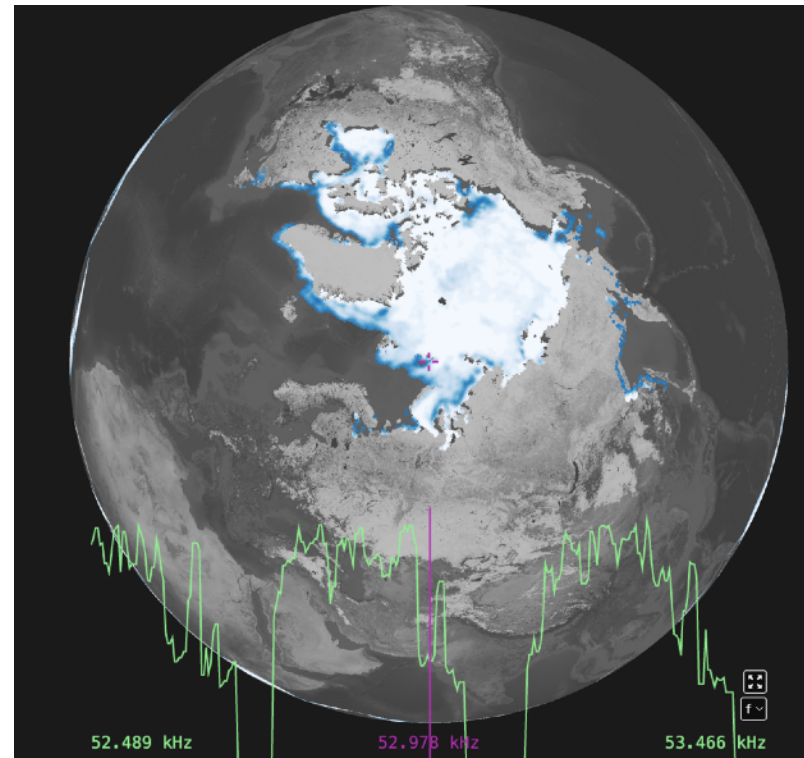
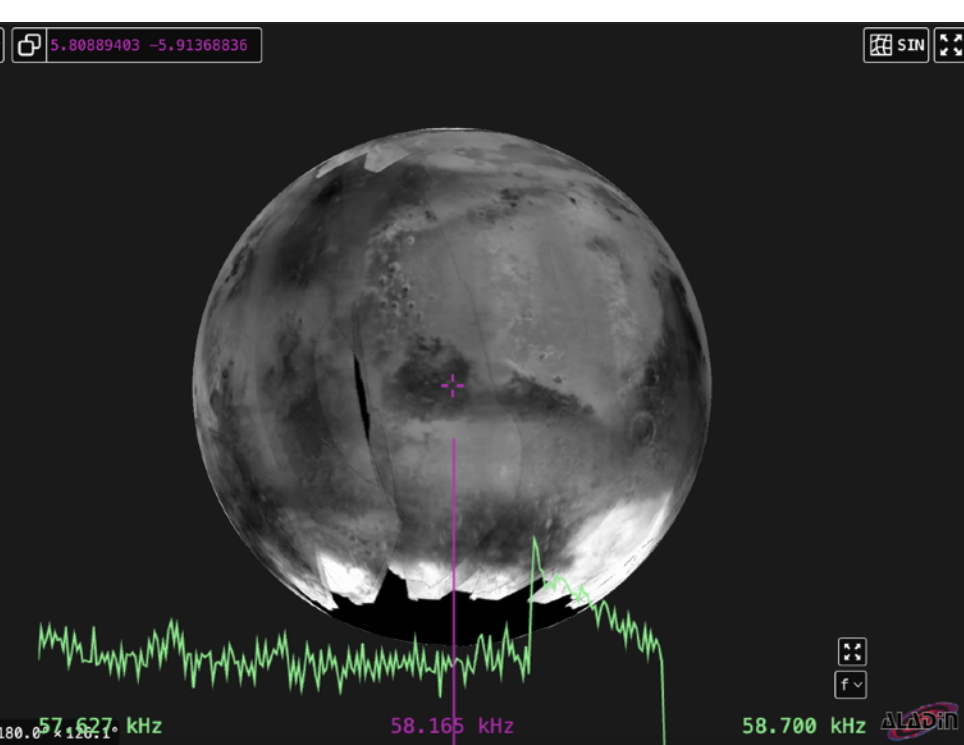
□ Datasets

- Mars MARCI (Mars Reconnaissance Orbiter)
 - Daily image of Mars during 10+ years
 - Data retrieved from JPL PDS site
- Earth sea ice concentration
 - Daily image (arctic/antarctic) from 1978 to 2025
==> 15000 observations
 - Data from NSIDC (National Snow and Ice Data Center)
- ZTF sample
 - 2500+ ZTF Science exposure images around Messier 101 between
 - Data from IRSA

□ Conversion to HiPS 3D

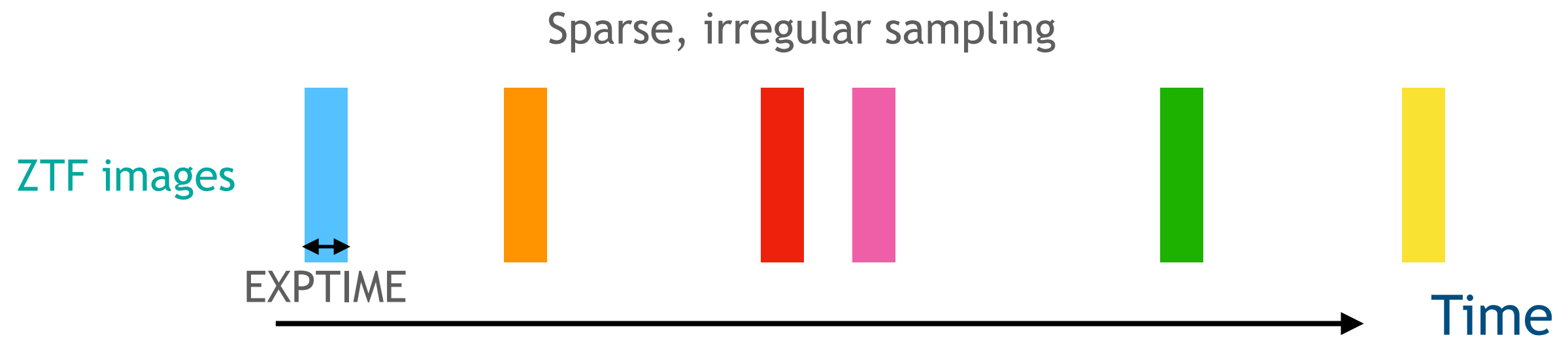
- Resample to common WCS if needed
- Create FITS cube (or several if input data too large)
 - Describe NAXIS3 as frequency in Hz
 - Pretend the date (MJD) is the frequency
- Run Hipsgen

□ Demo

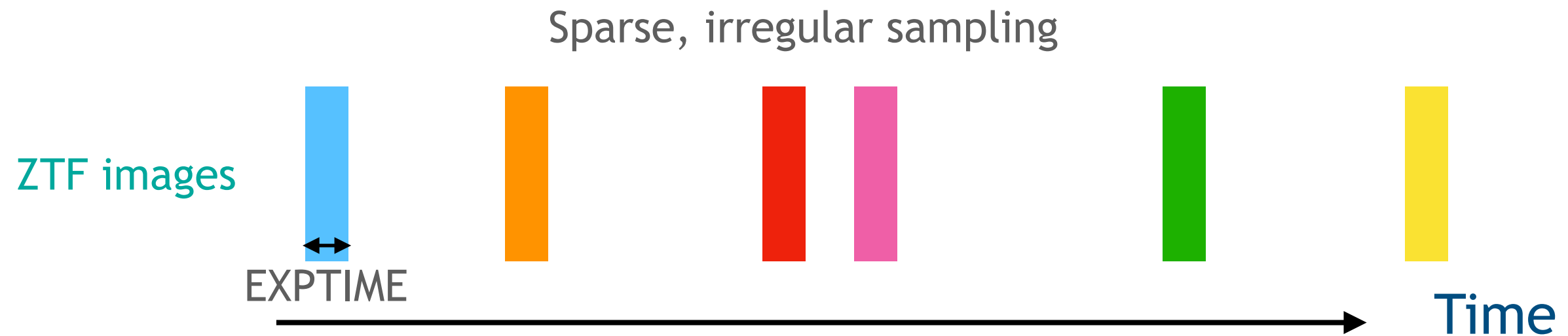


- https://alasky.cds.unistra.fr/HIPS3D/CDS_C_Earth-sea-ice-concentration/
- https://alasky.cds.unistra.fr/HIPS3D/CDS_C_Mars_MARCI_time-serie/

□ ZTF cubes creation

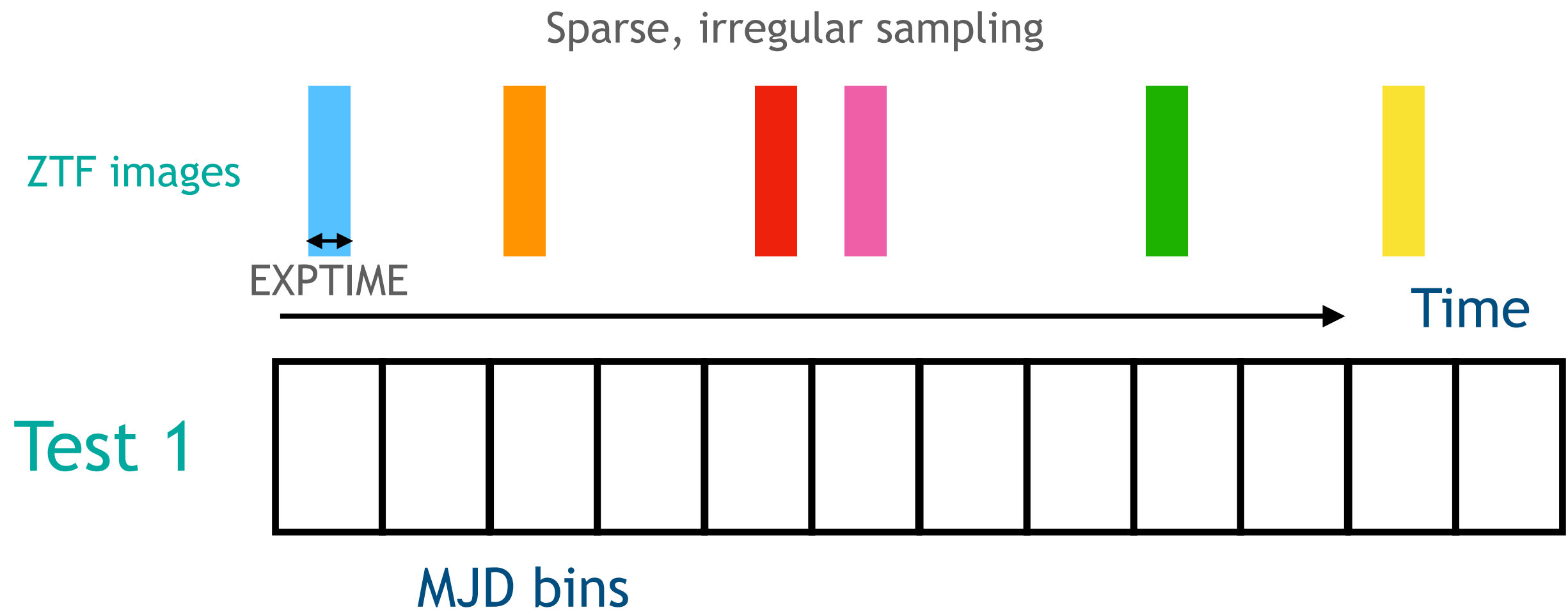


□ ZTF cubes creation

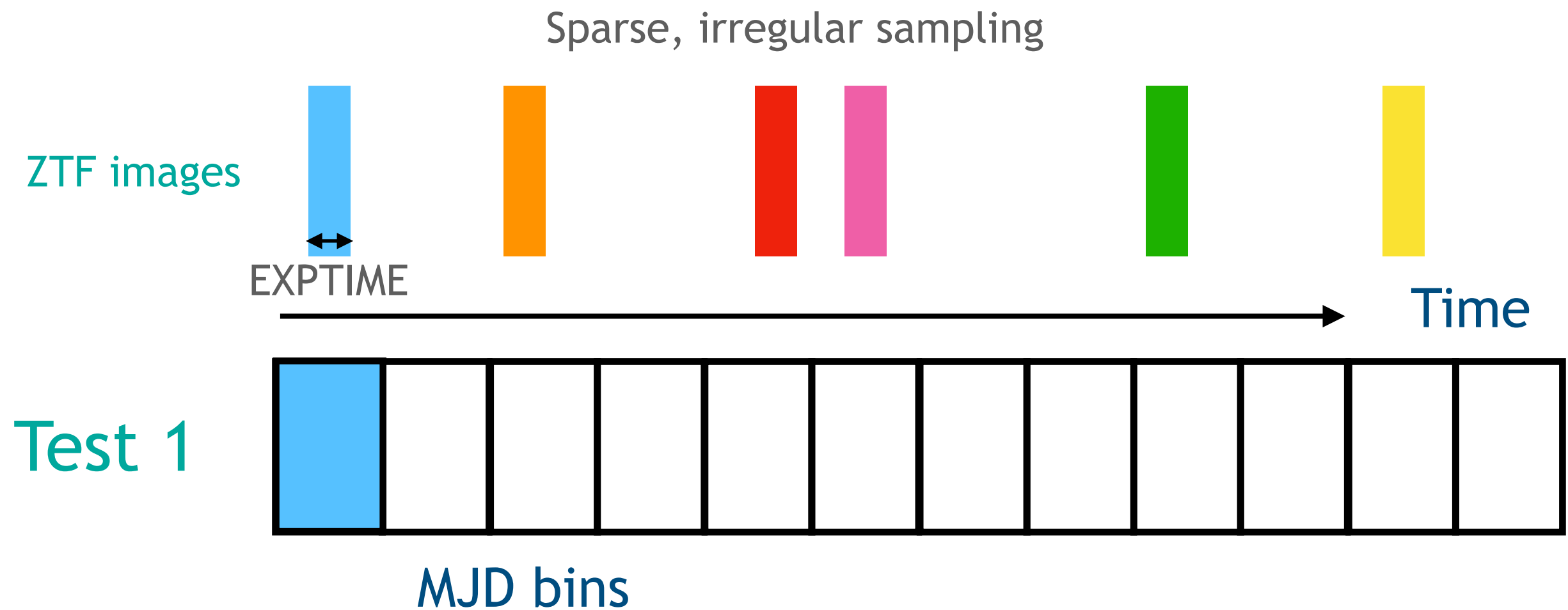


Test 1

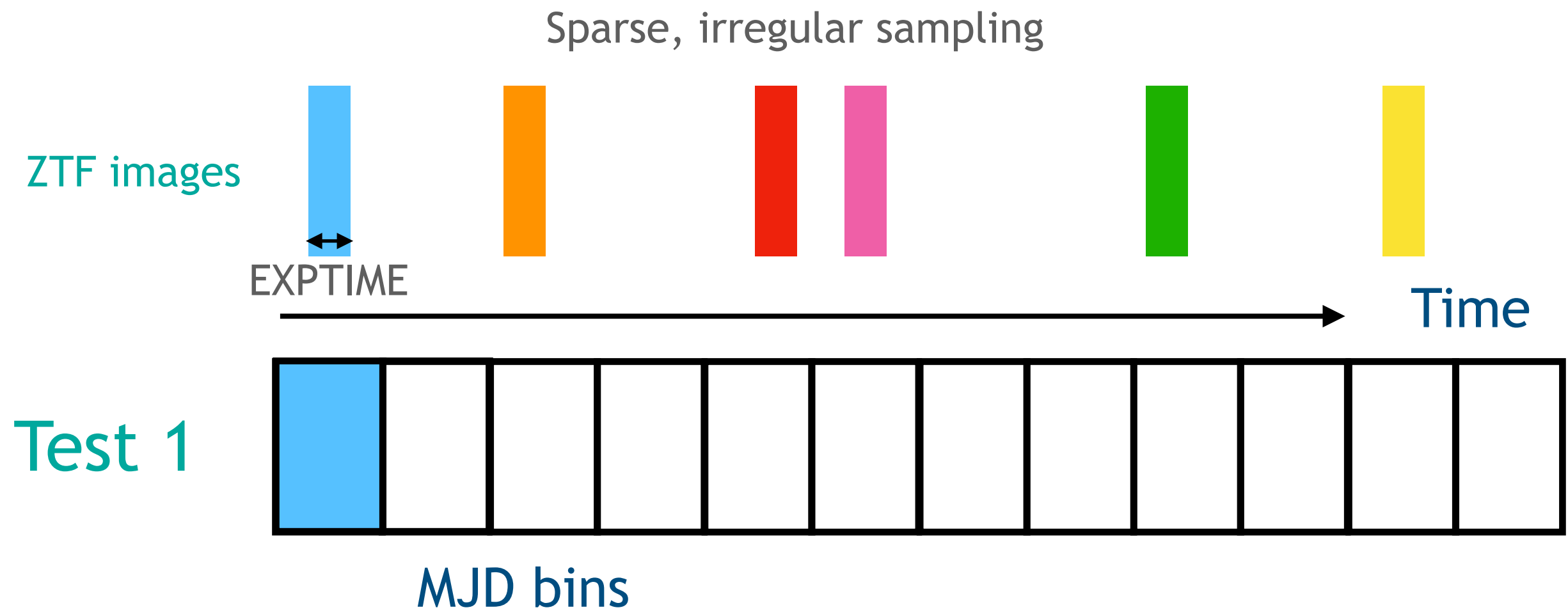
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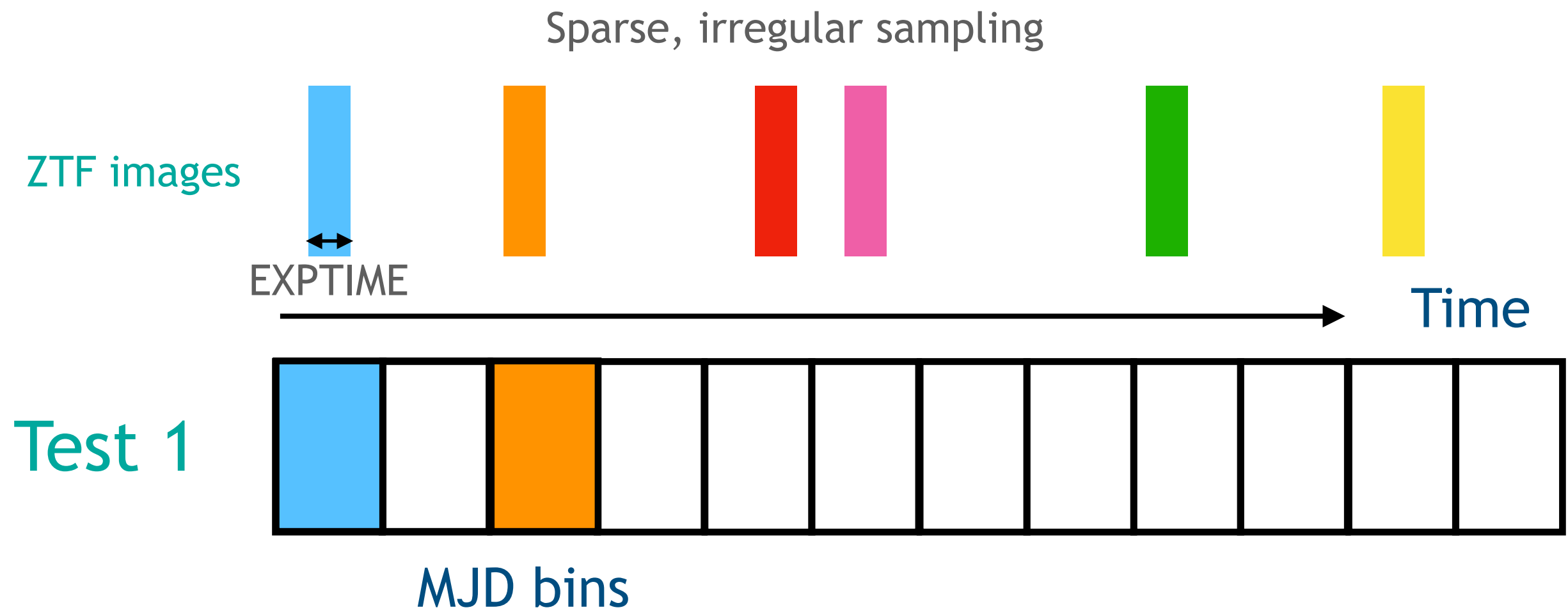
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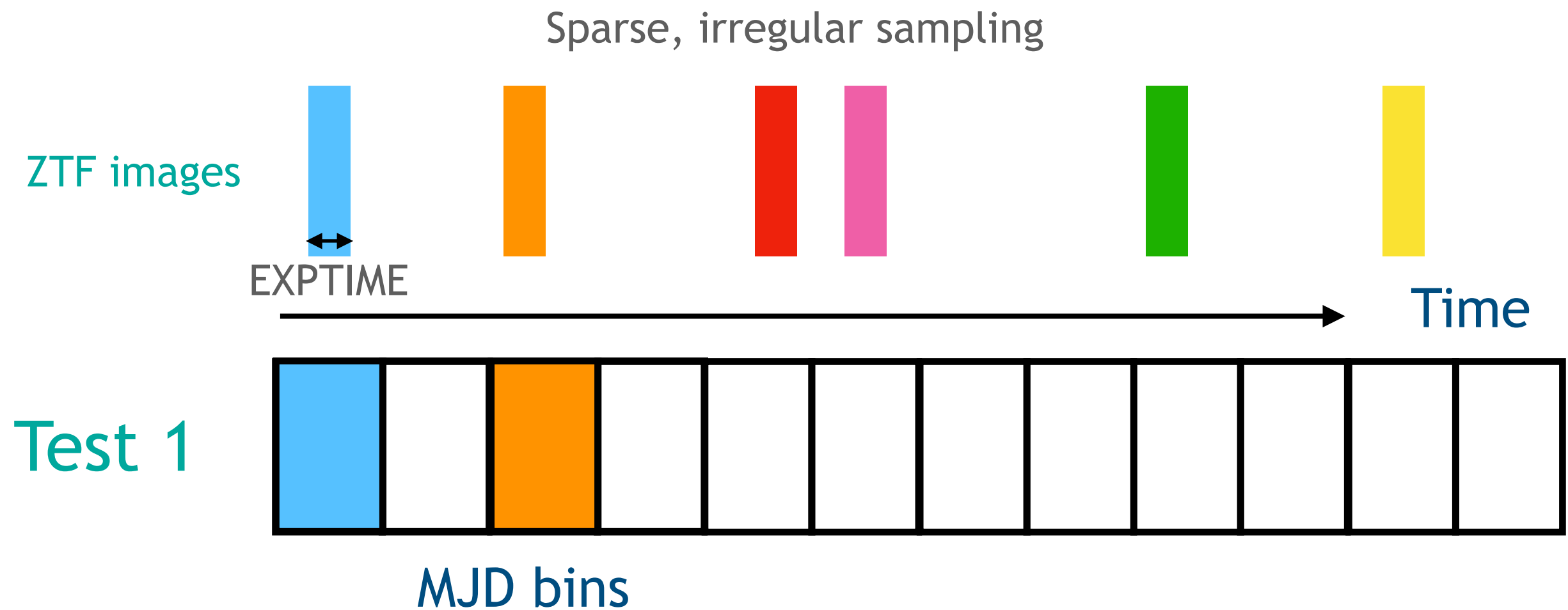
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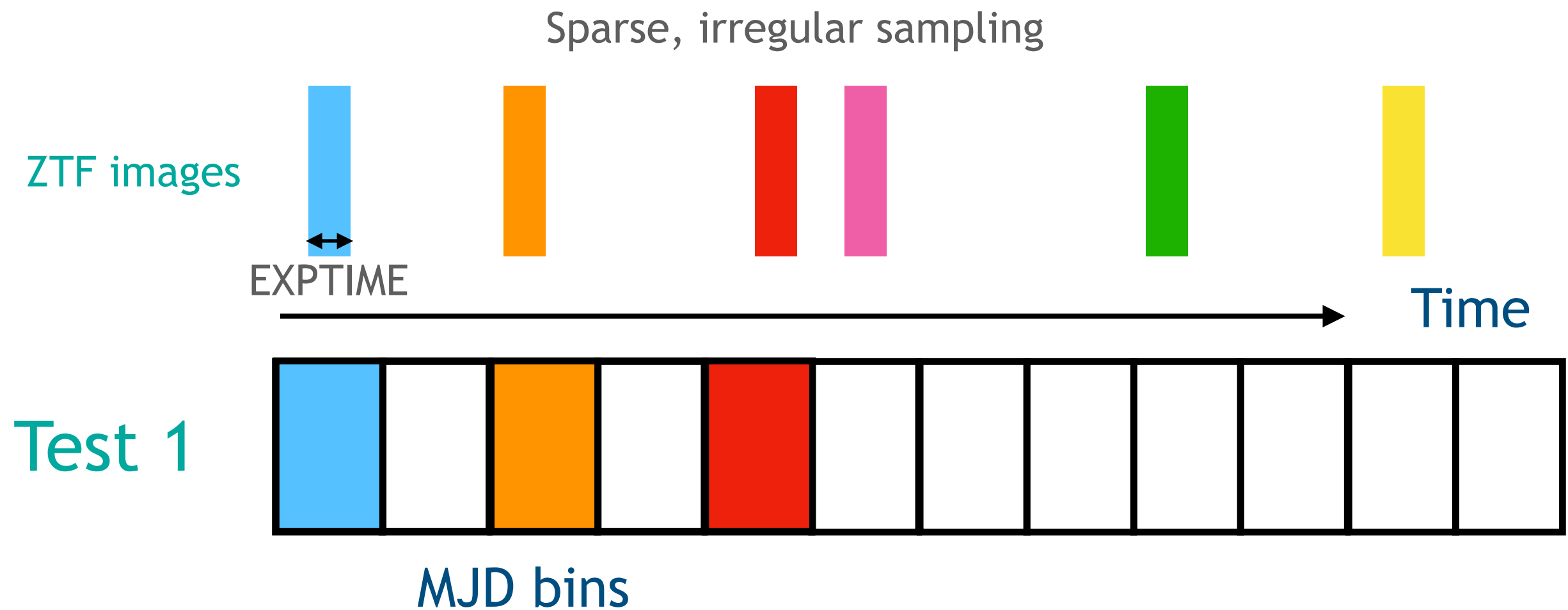
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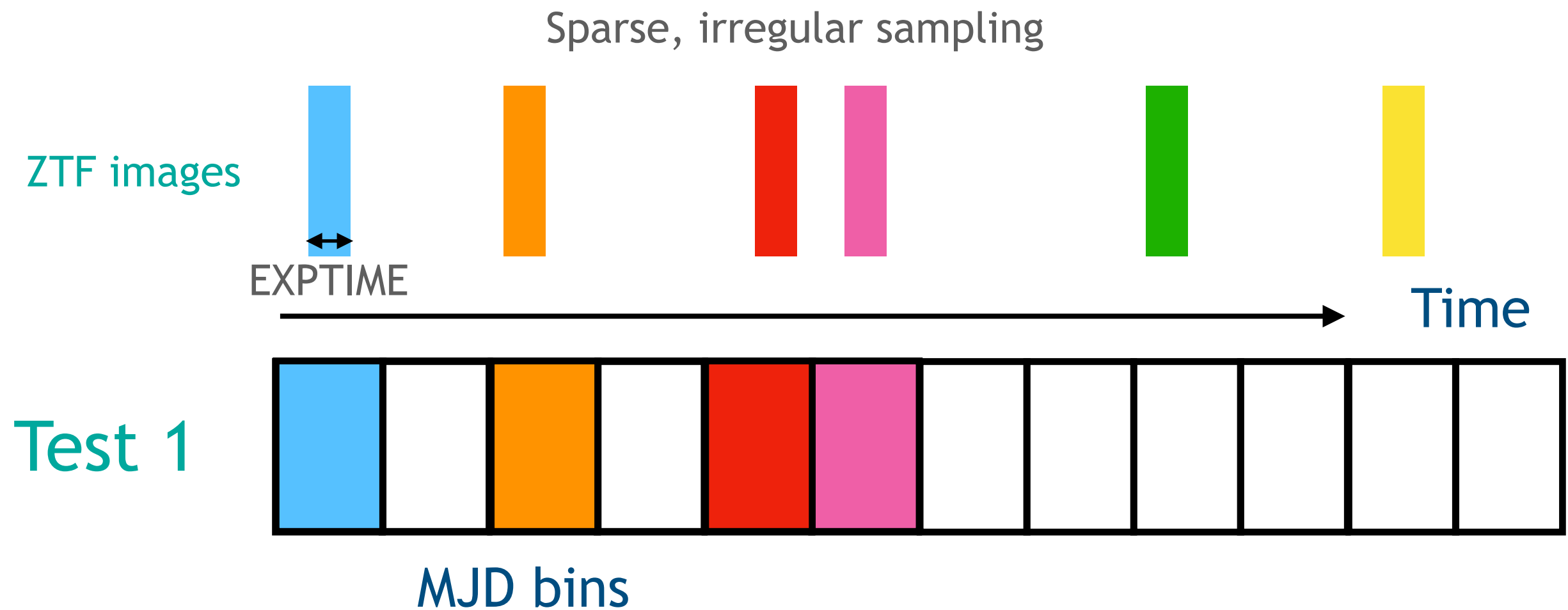
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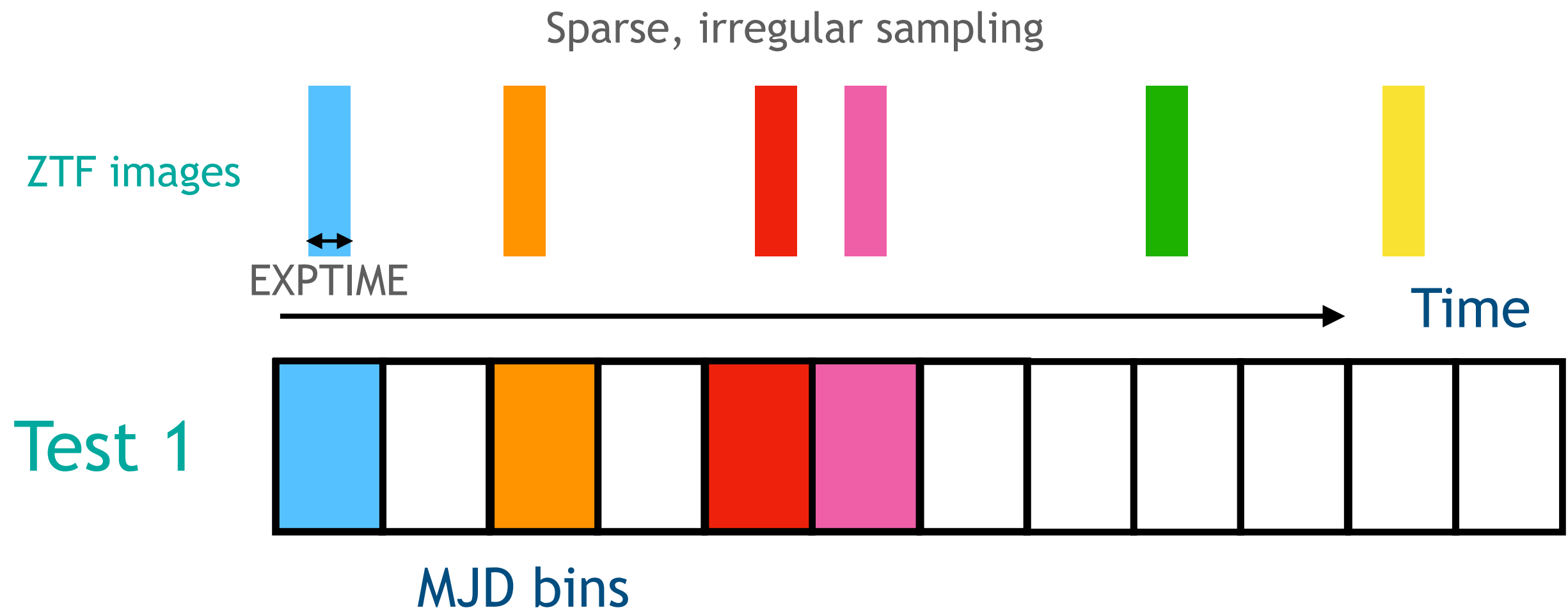
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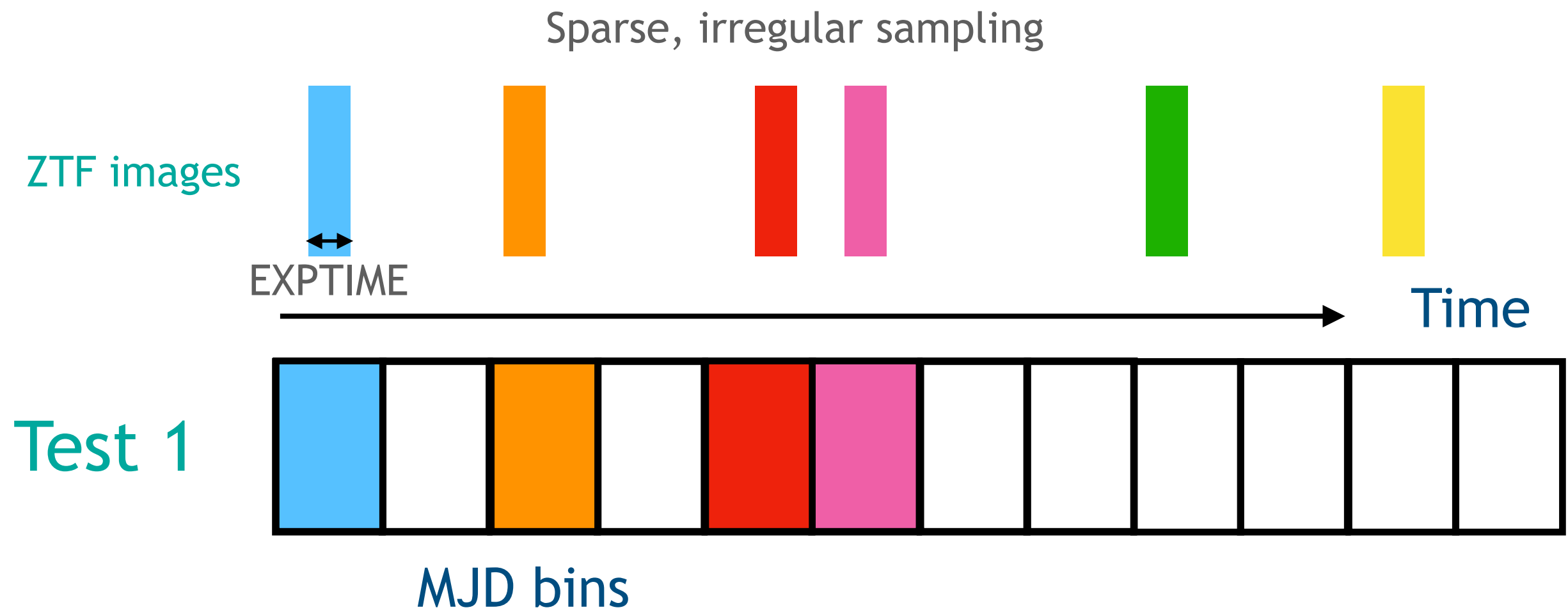
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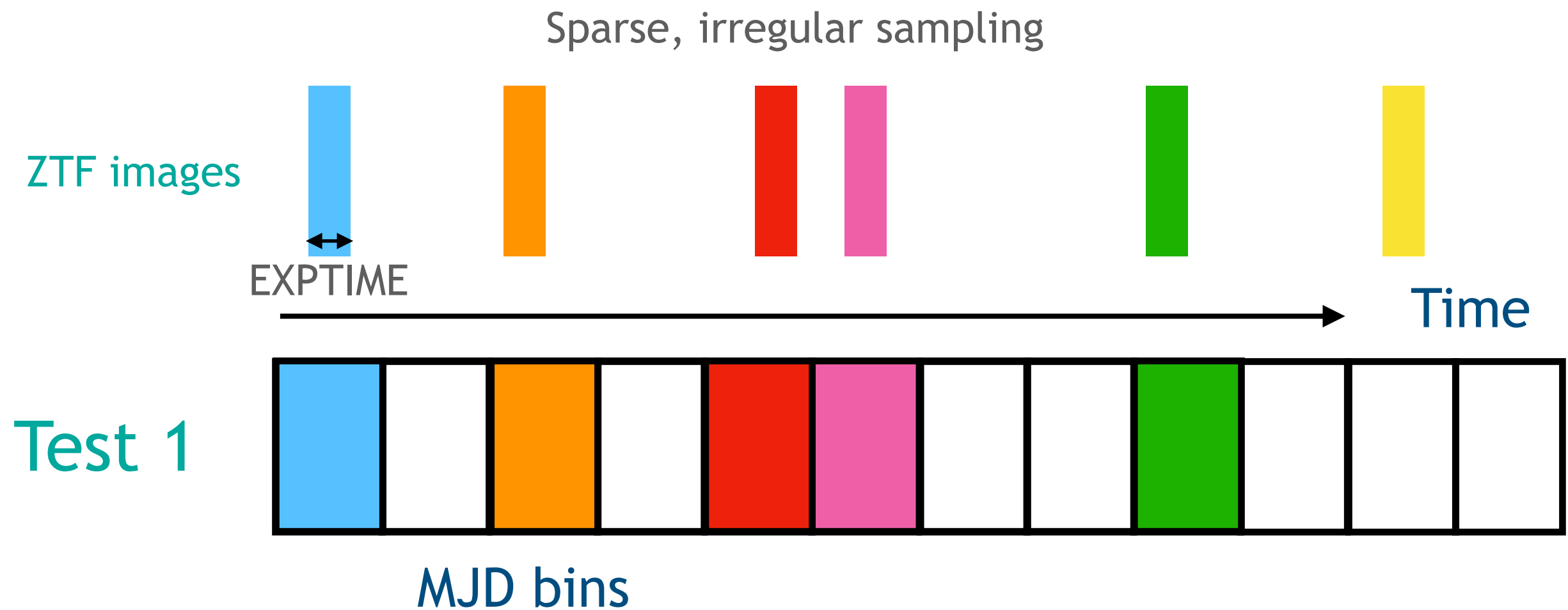
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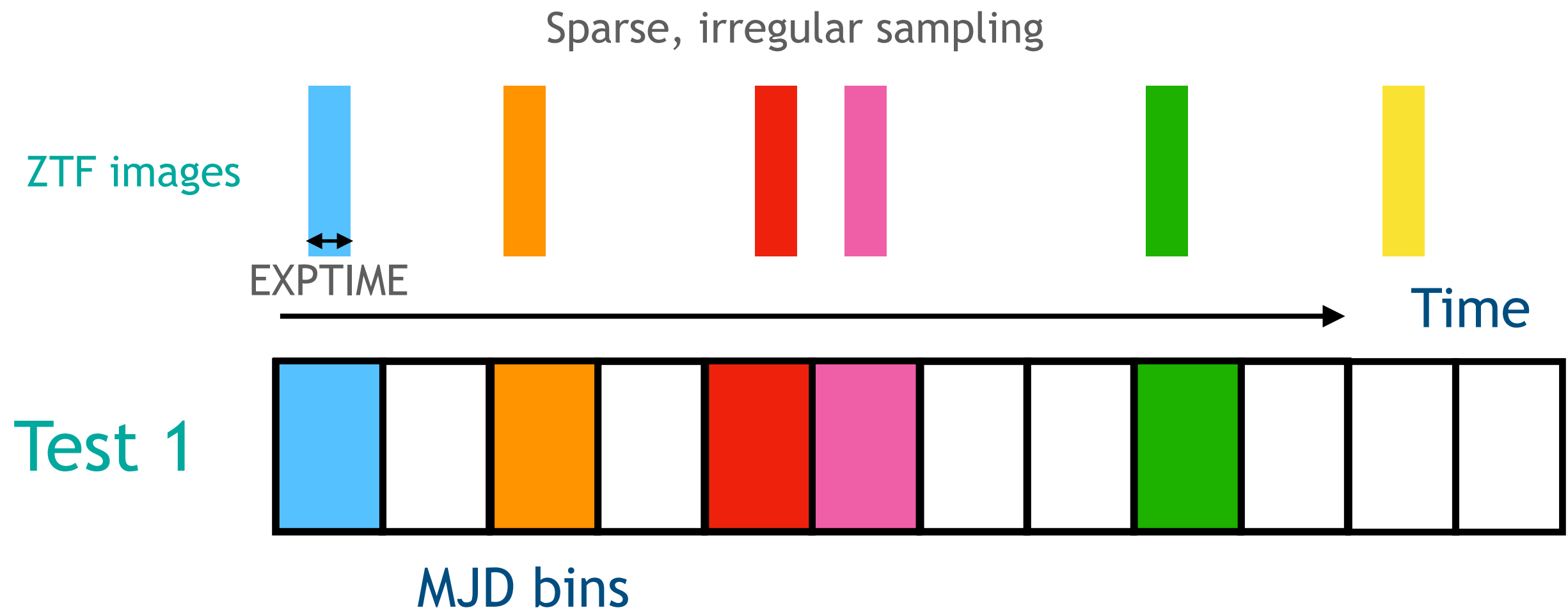
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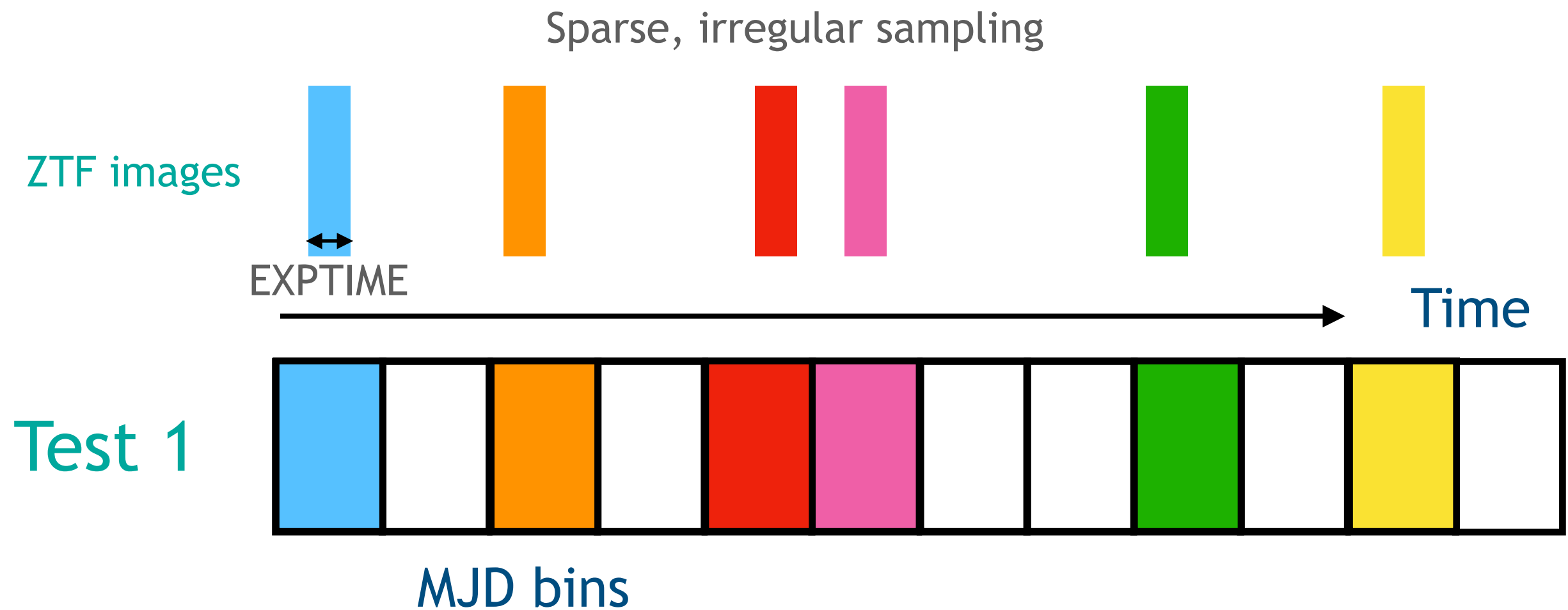
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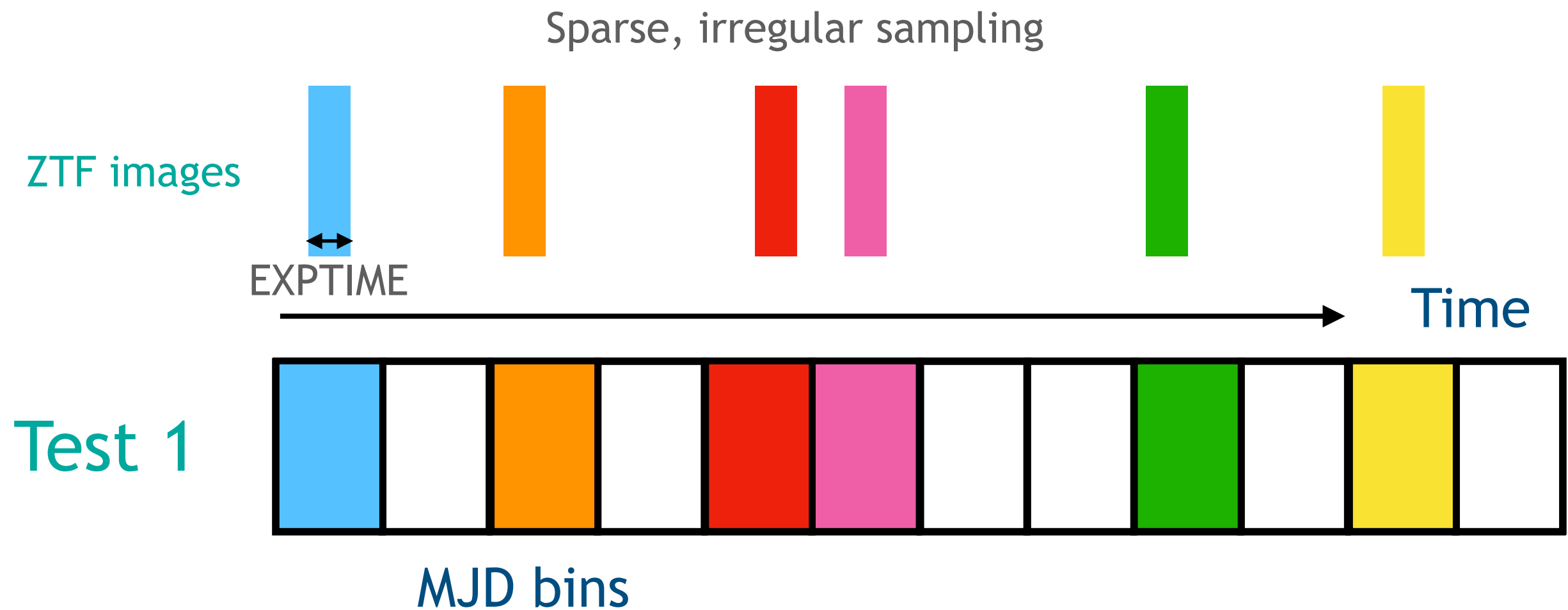
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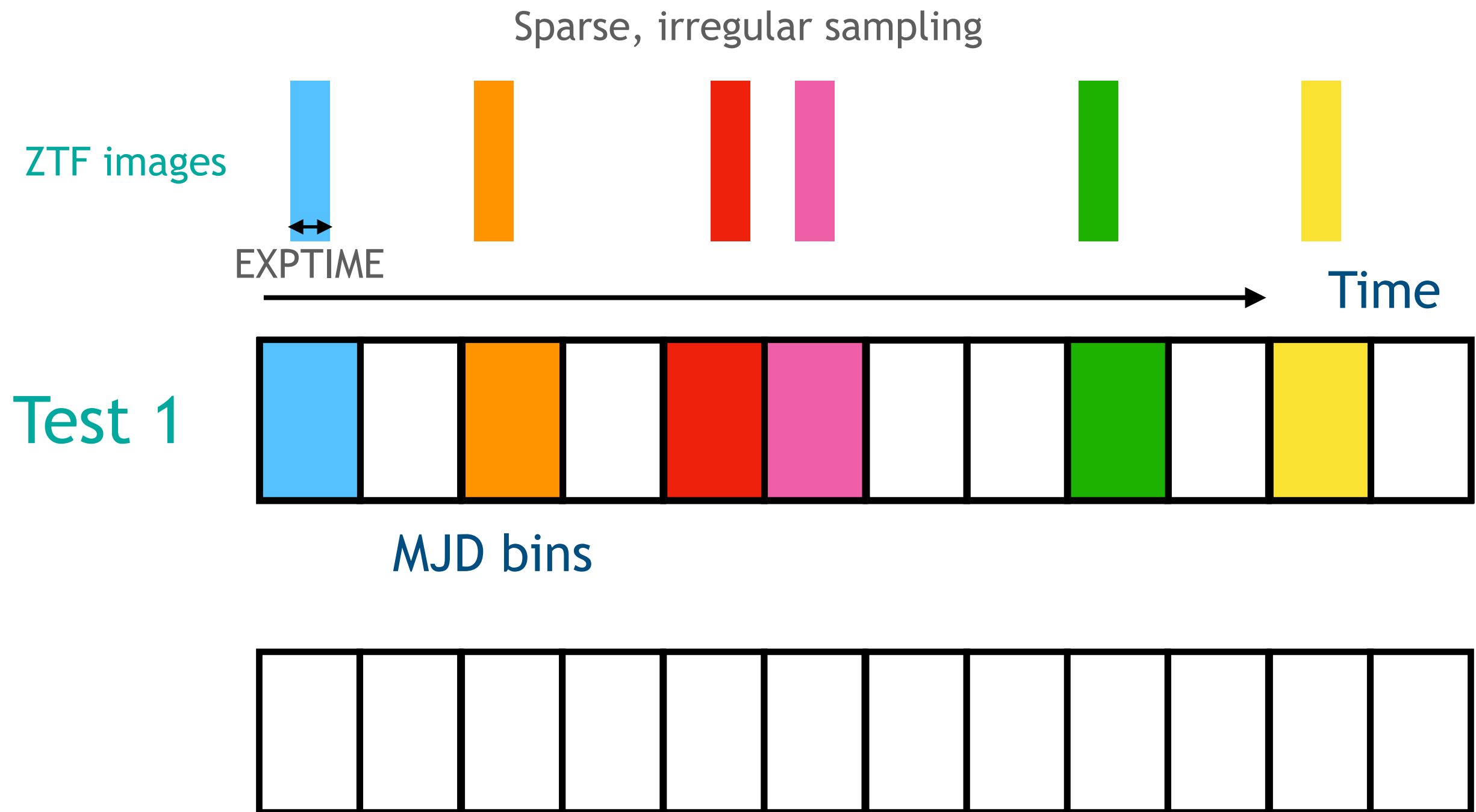
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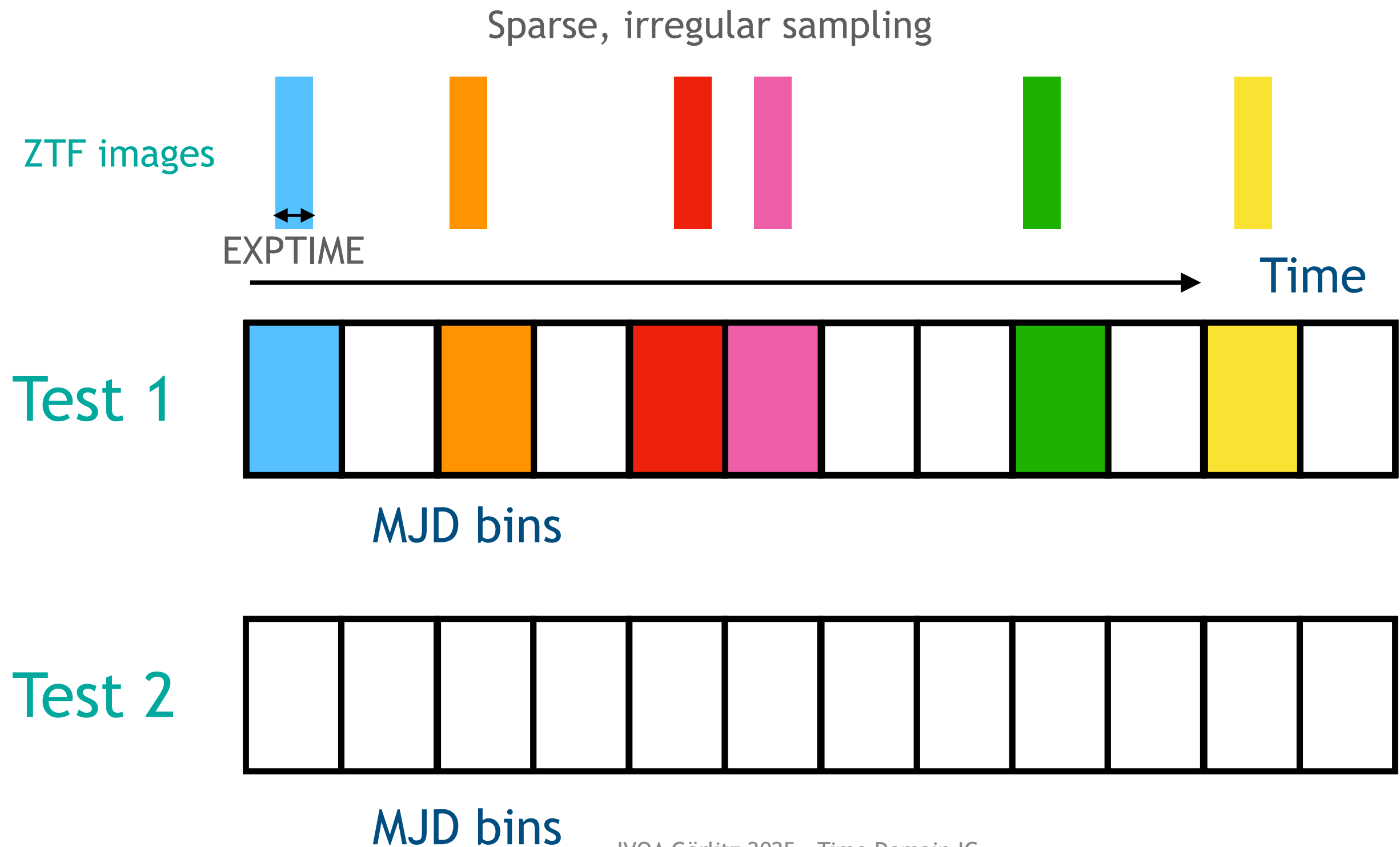
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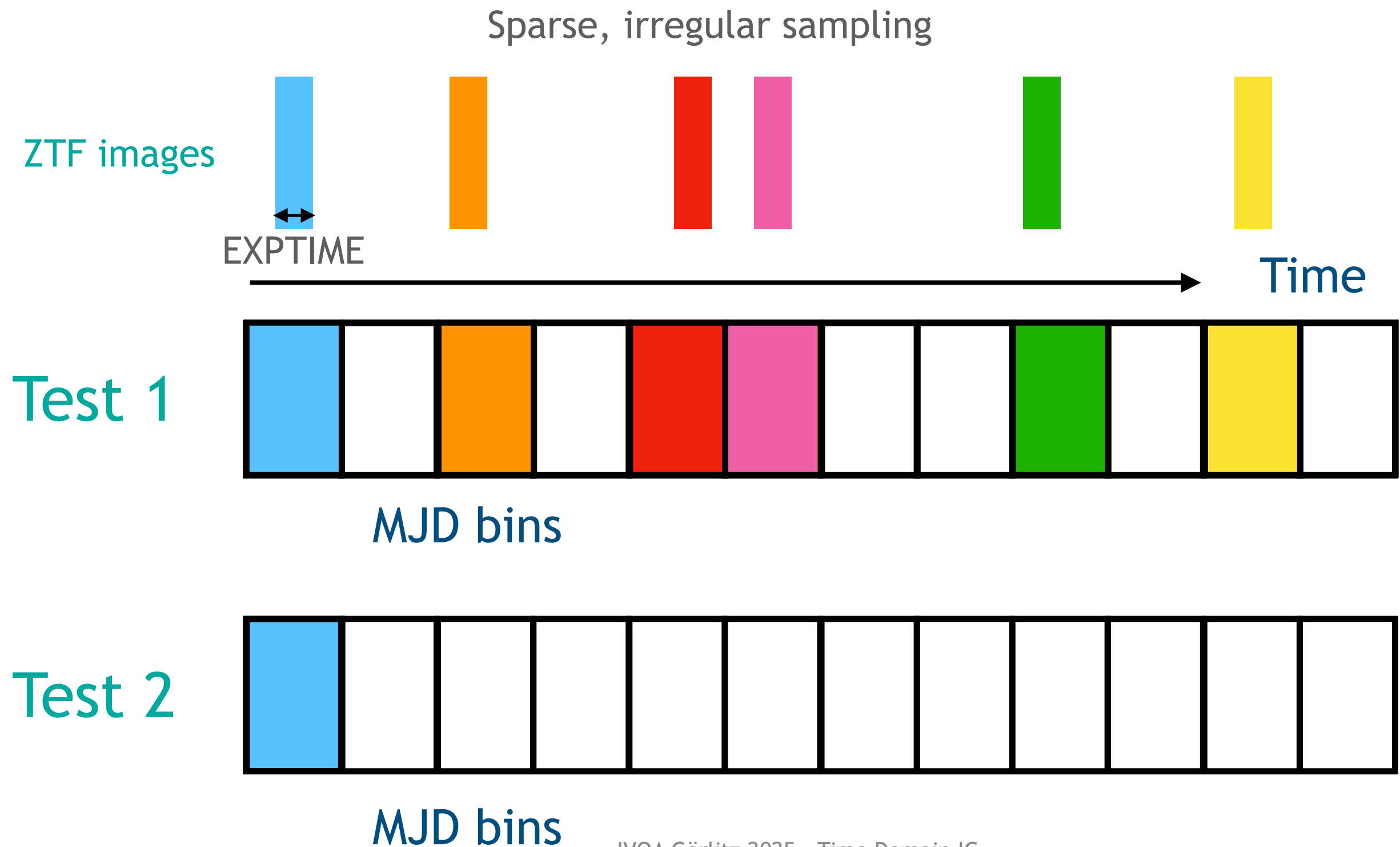
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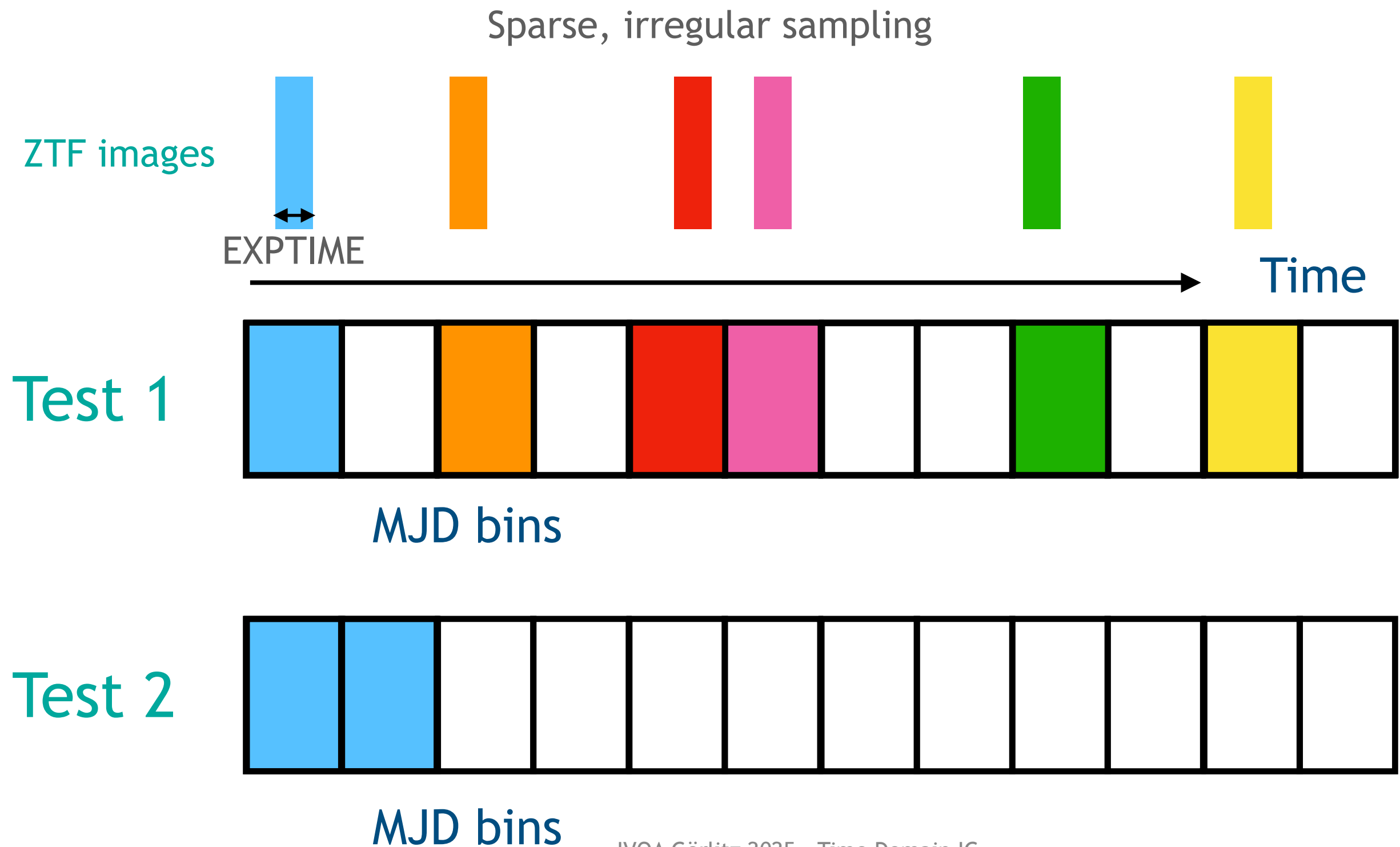
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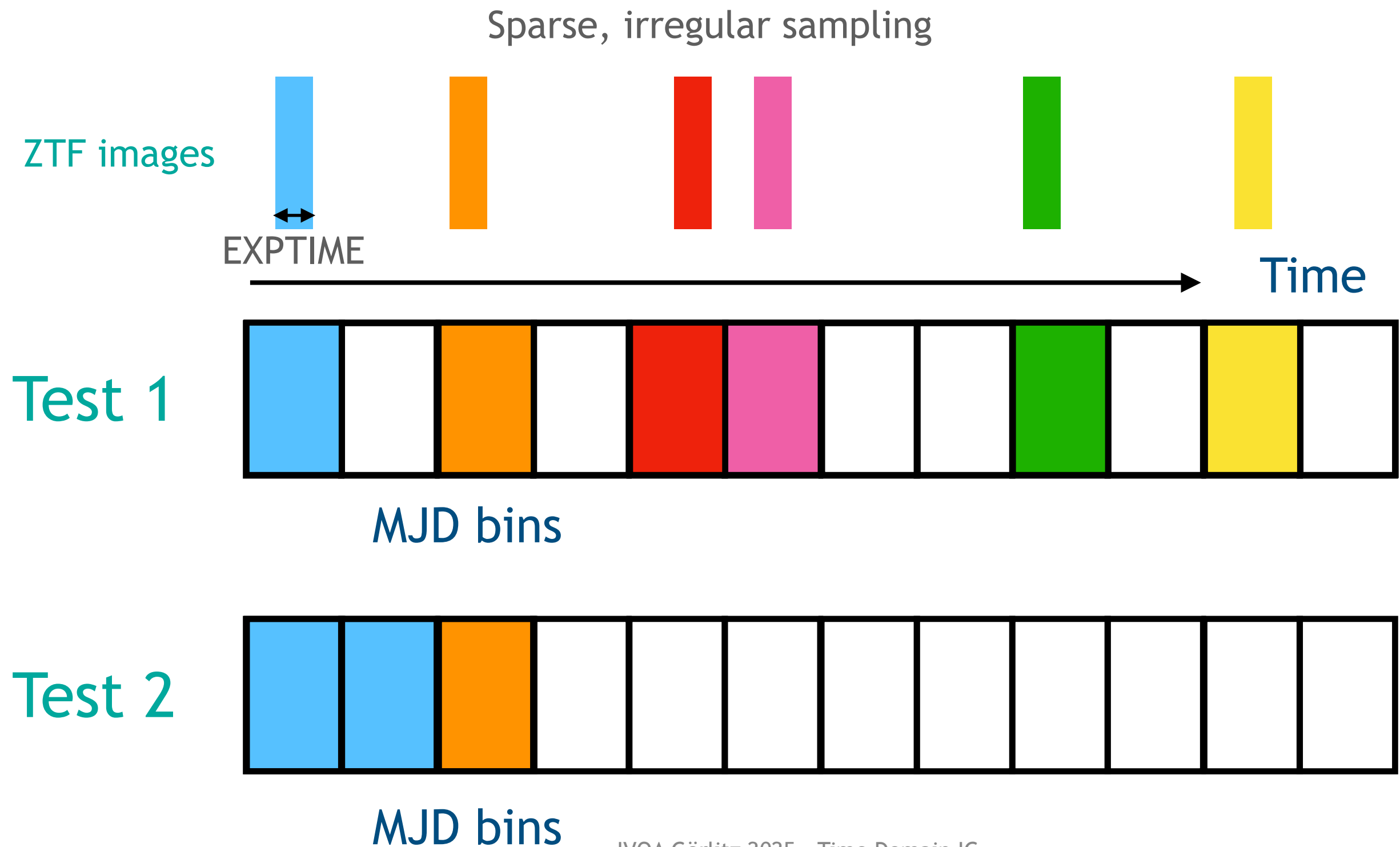
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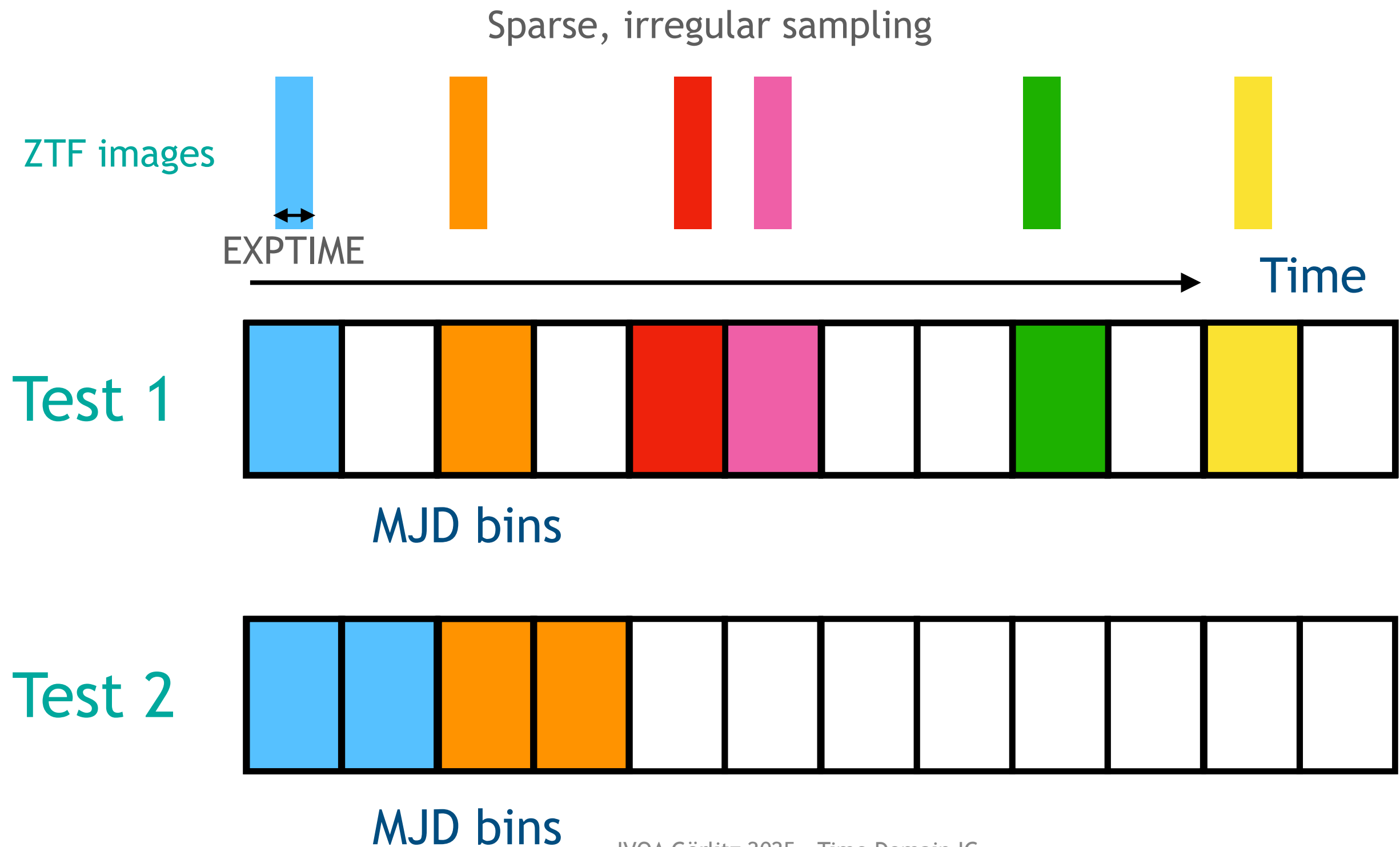
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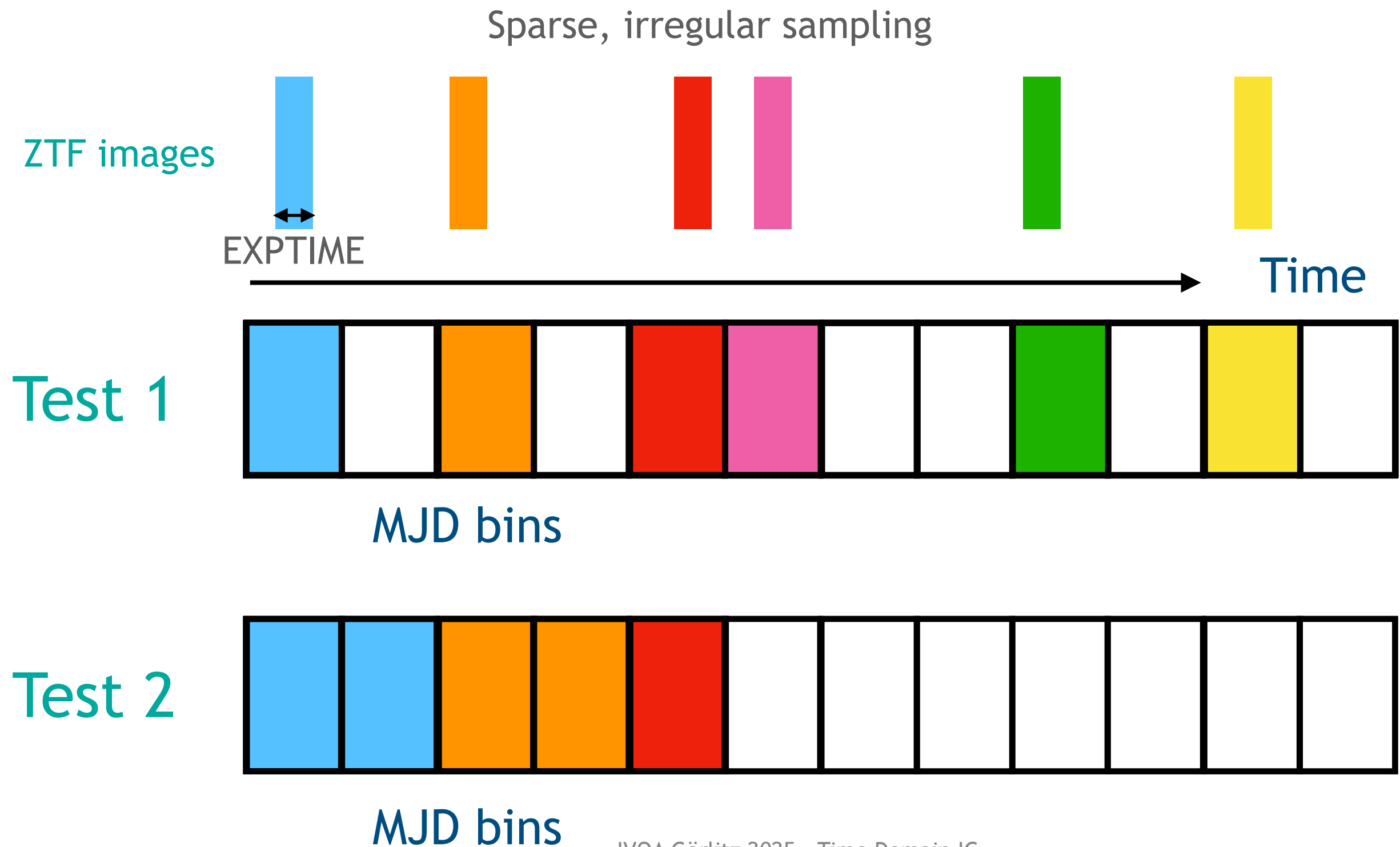
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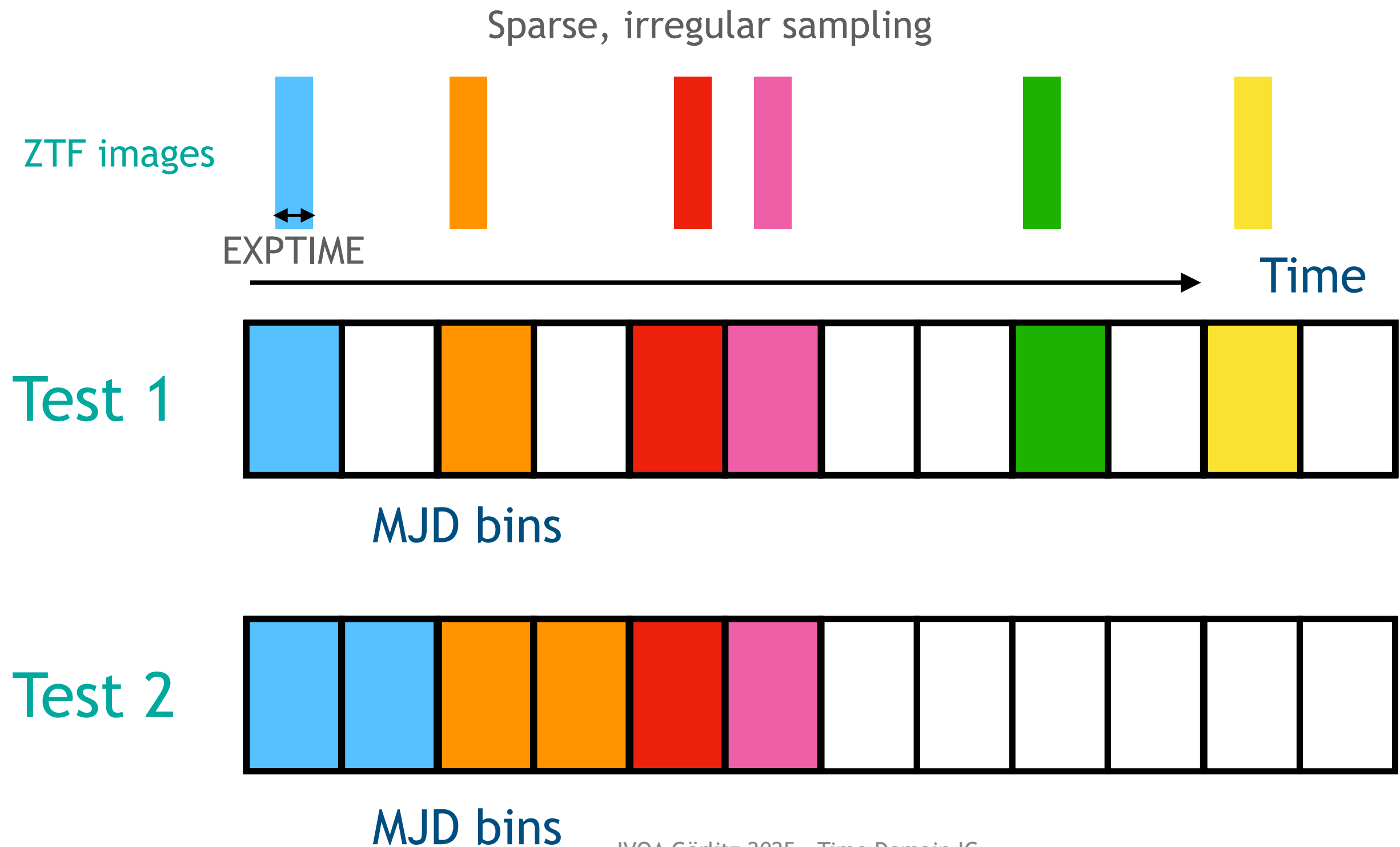
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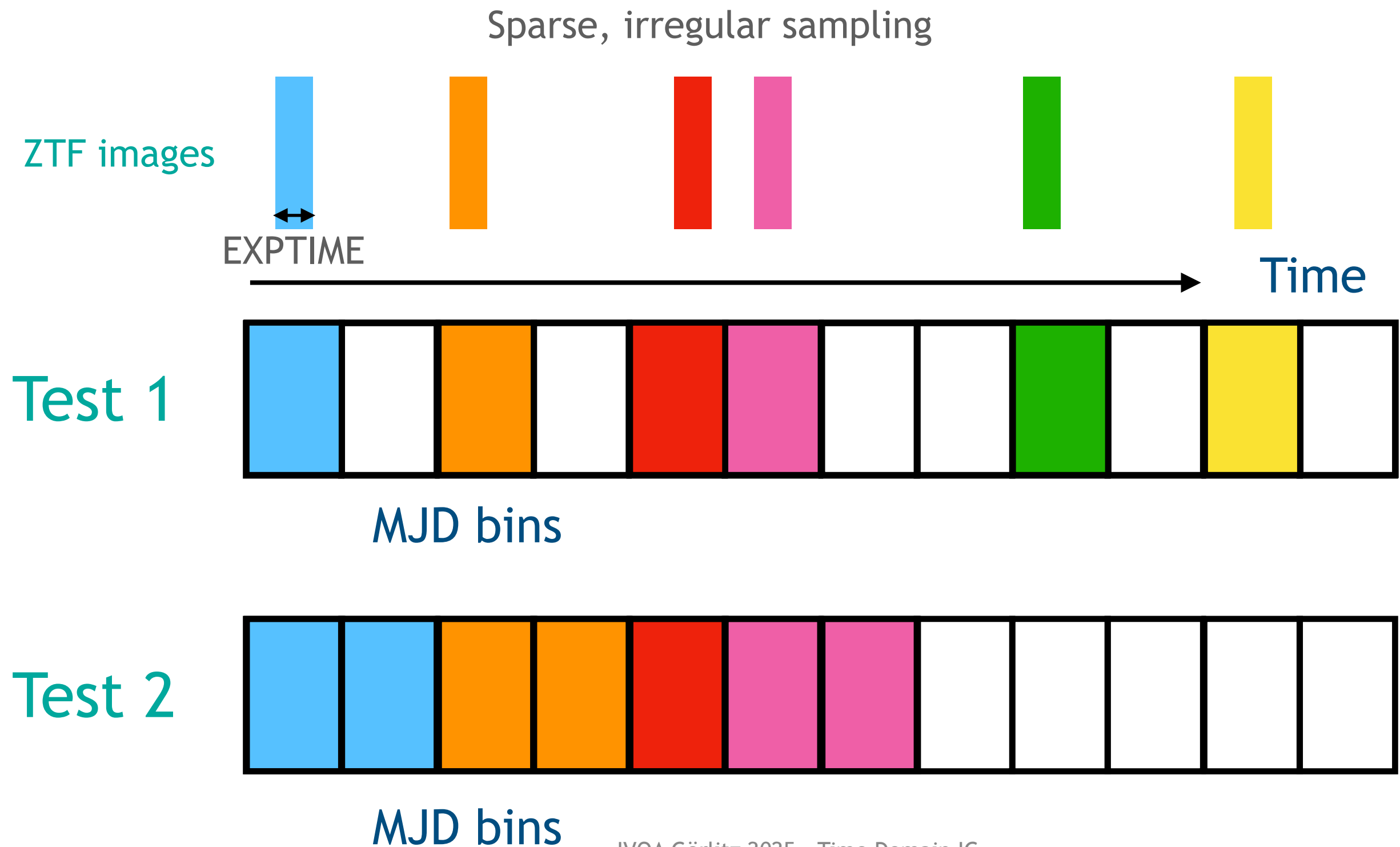
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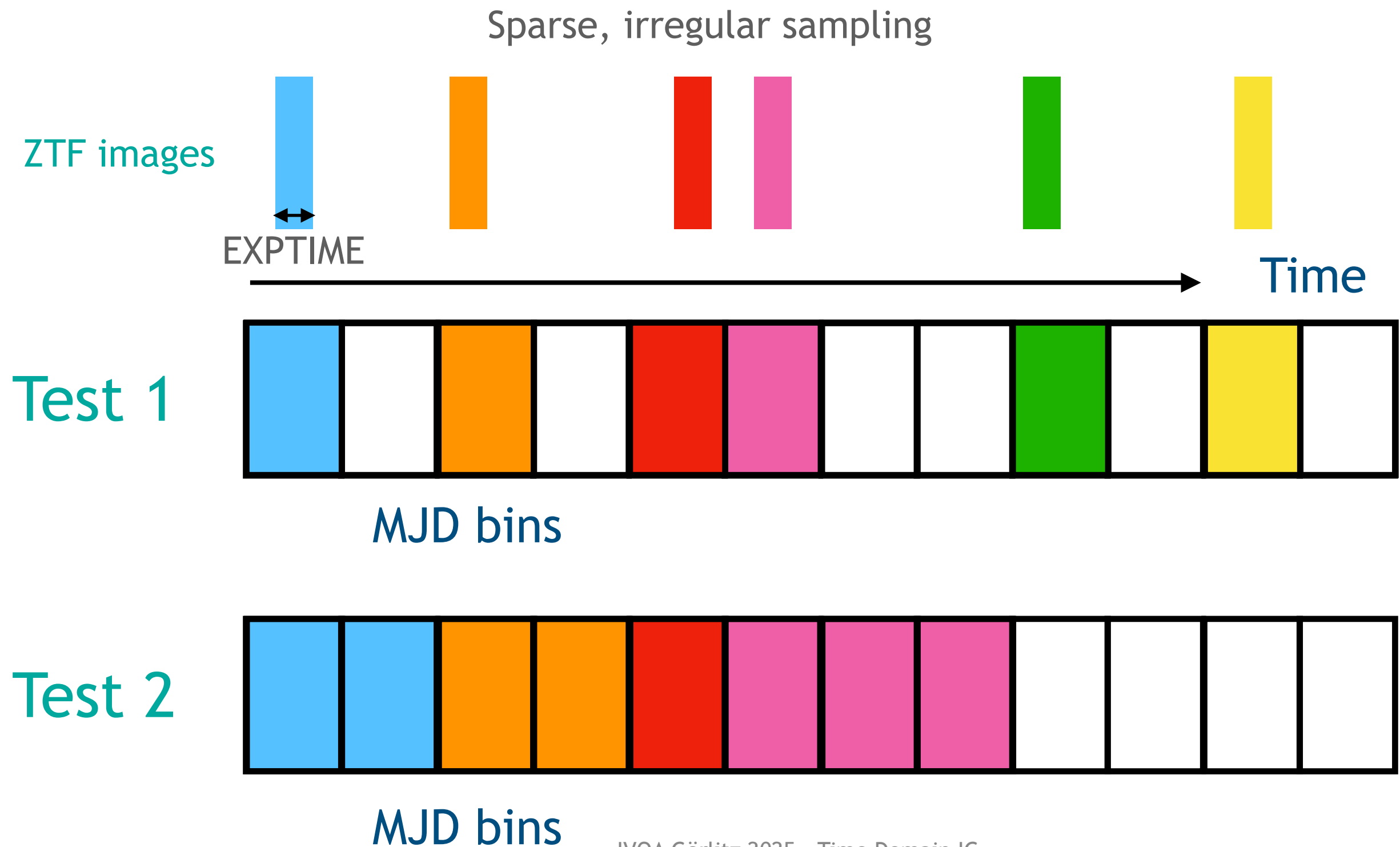
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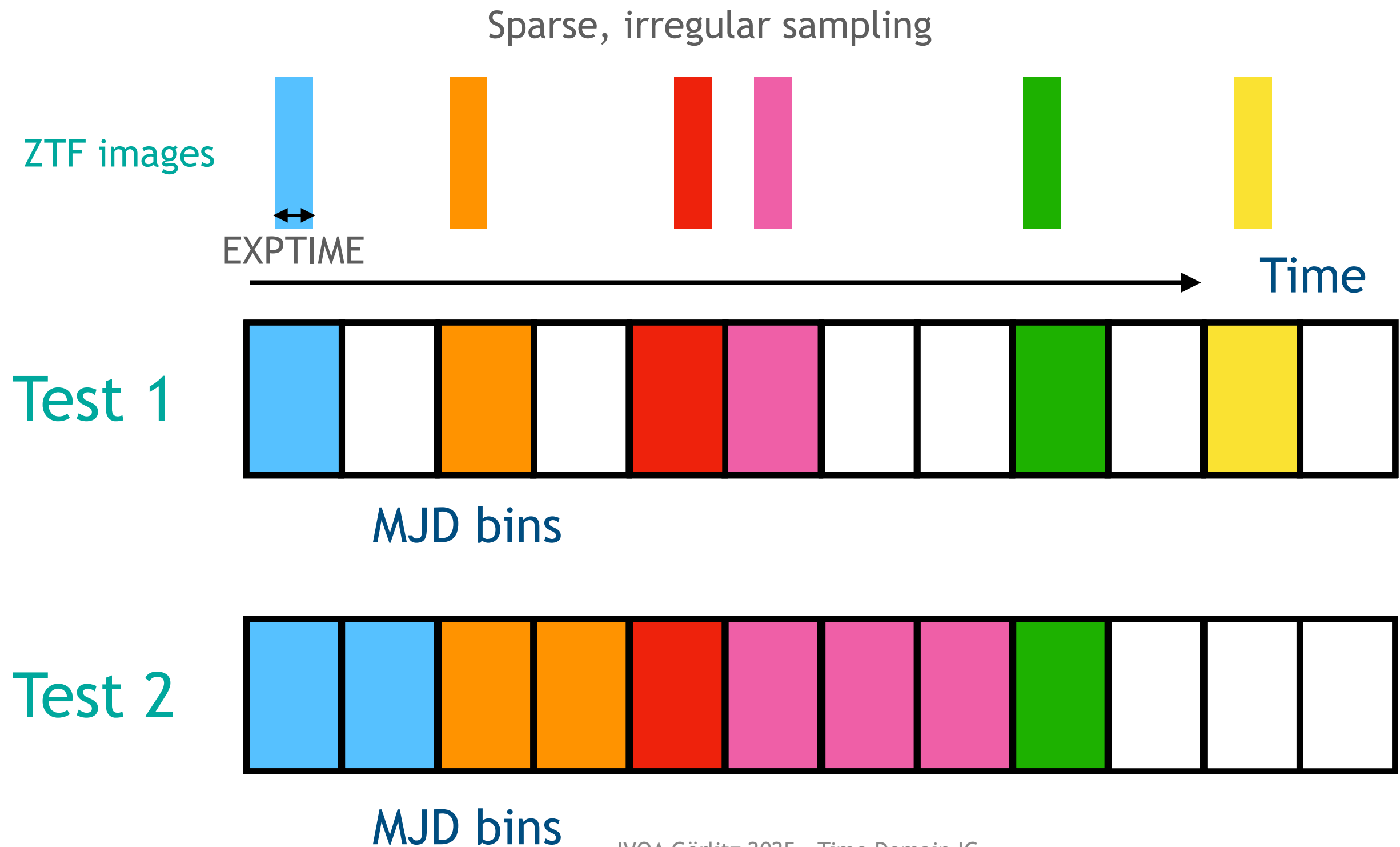
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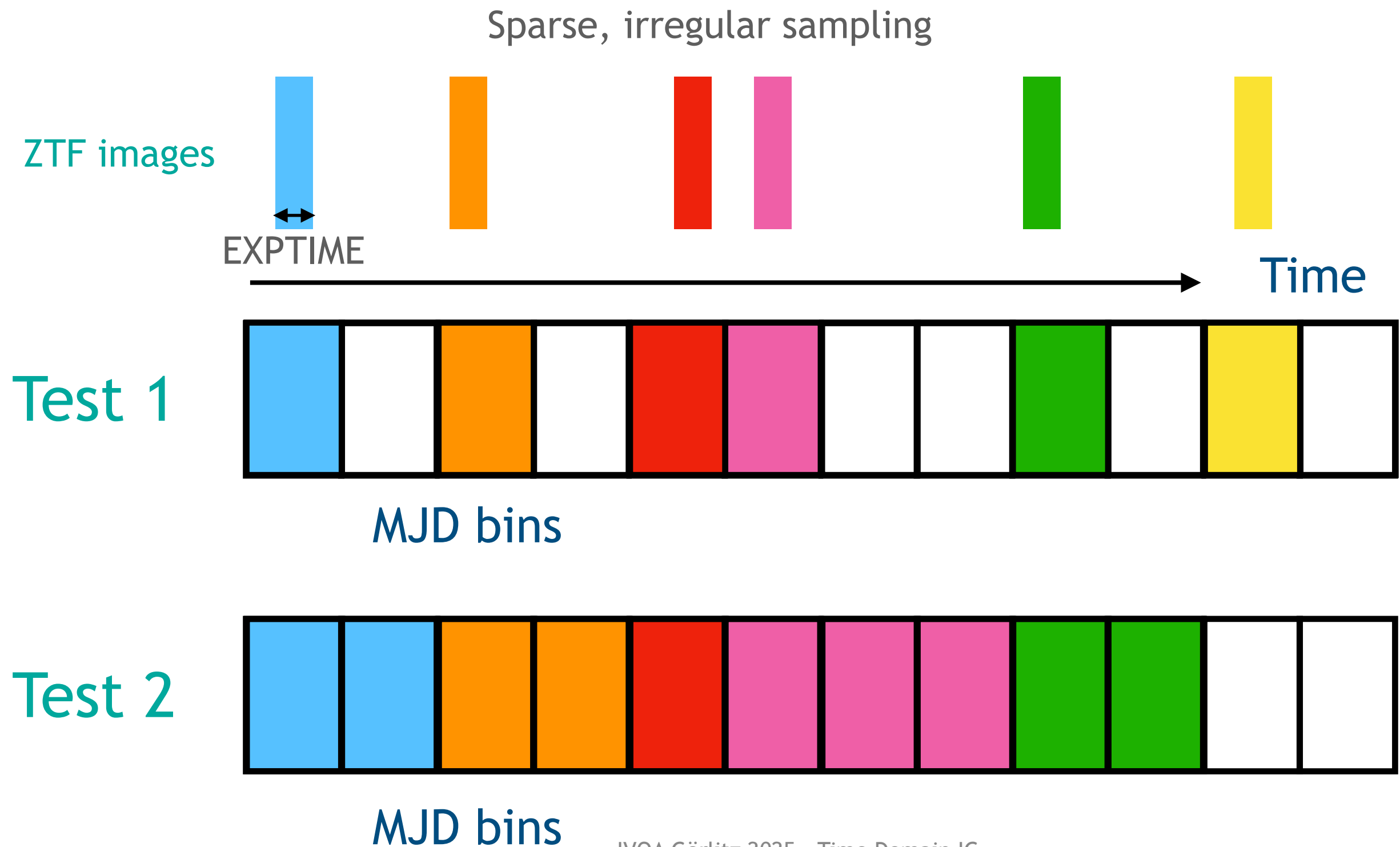
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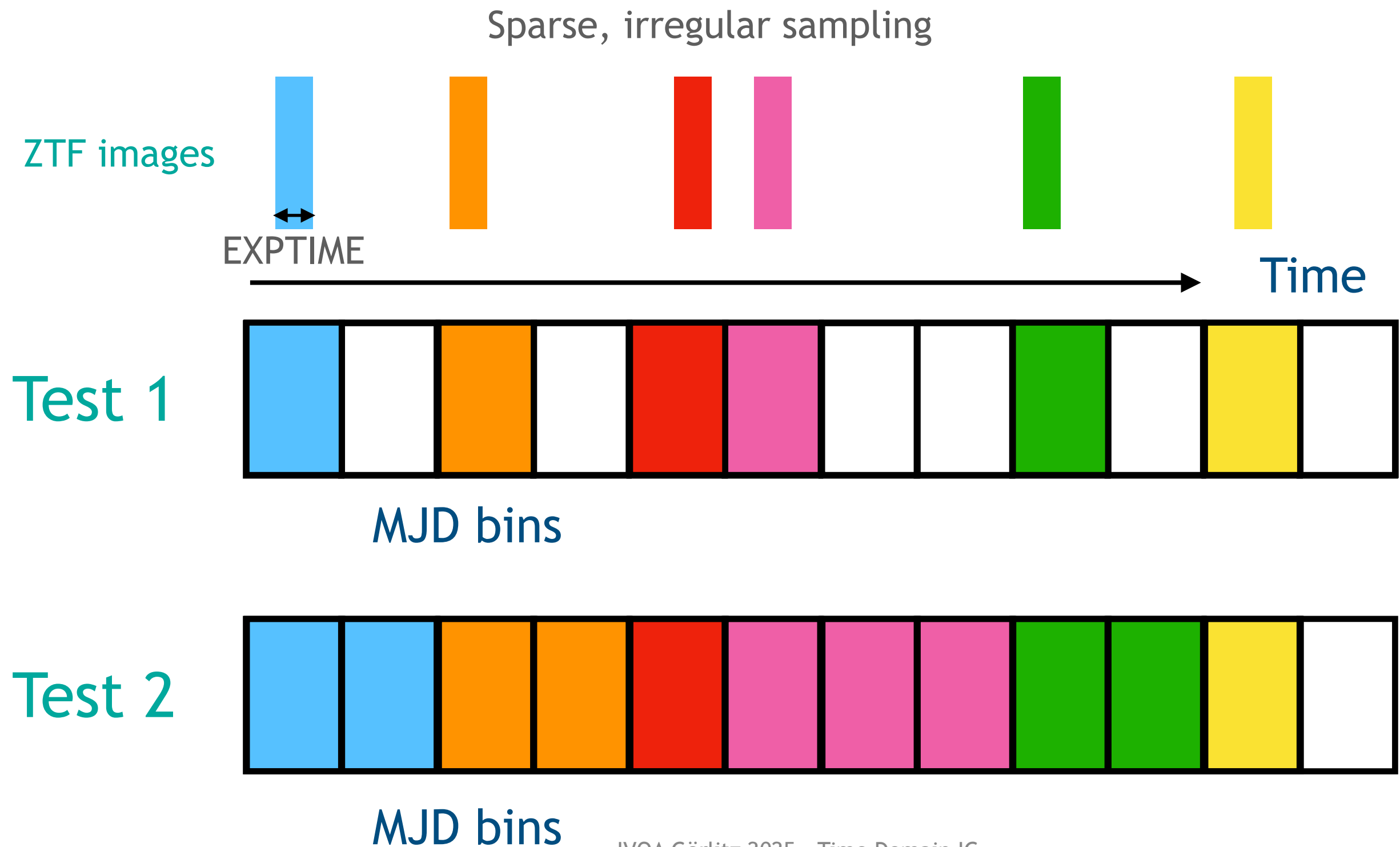
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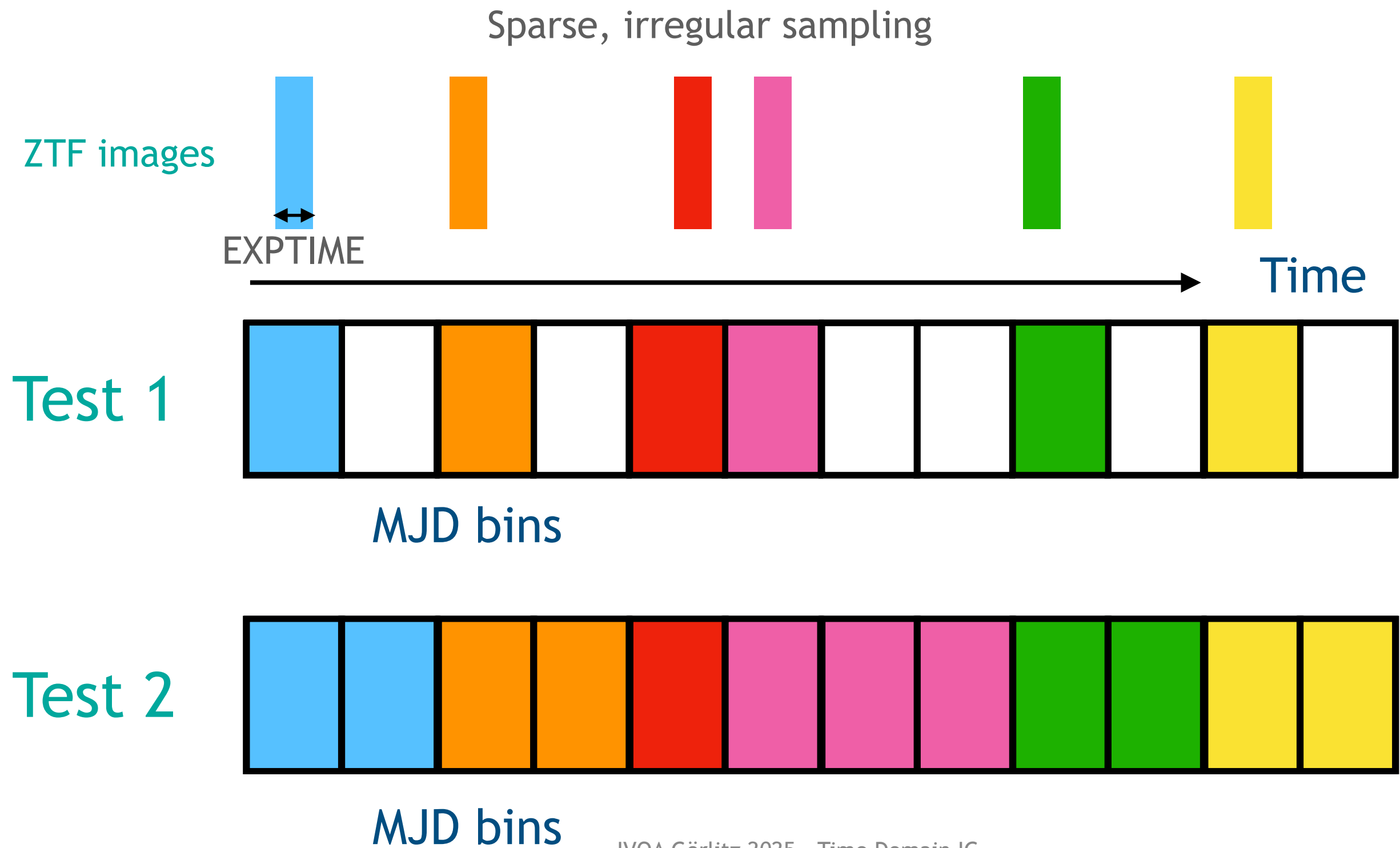
□ ZTF cubes creation



□ ZTF cubes creation



□ ZTF cubes creation



□ What's missing? Discussion

- Proper way to describe a temporal HiPS 3D
 - TMOC time scale
 - `dataprodect_type = time-cube` (?)